

MAGNETICALLY COUPLED LINEAR SERVO-DRIVE MECHANISM

ABSTRACT OF THE DISCLOSURE

The mechanism comprises a magnetically coupled drive

5 mechanism for transporting semiconductor wafers in a semiconductor
wafer processing system. The mechanism includes an actuator within a
cylinder that contains a set of magnets that drive a complementary set of
magnets inside a carriage along a linear path. The carriage is limited to
linear motion via a linear ball slide. The magnets in the actuator and
10 carriage are magnetically coupled in such a way as to prevent angular
rotation of the magnets within the actuator. Accordingly, driving
elements in the actuator can be moved via rotation of a ball screw shaft
coupled to a ball nut affixed to the actuator magnets.